ROUTE CONCEPT REPORT

STATE ROUTE 84

by
CALTRANS
District 3
July 1990 (Revised)

APPROVAL RECOMMENDED:

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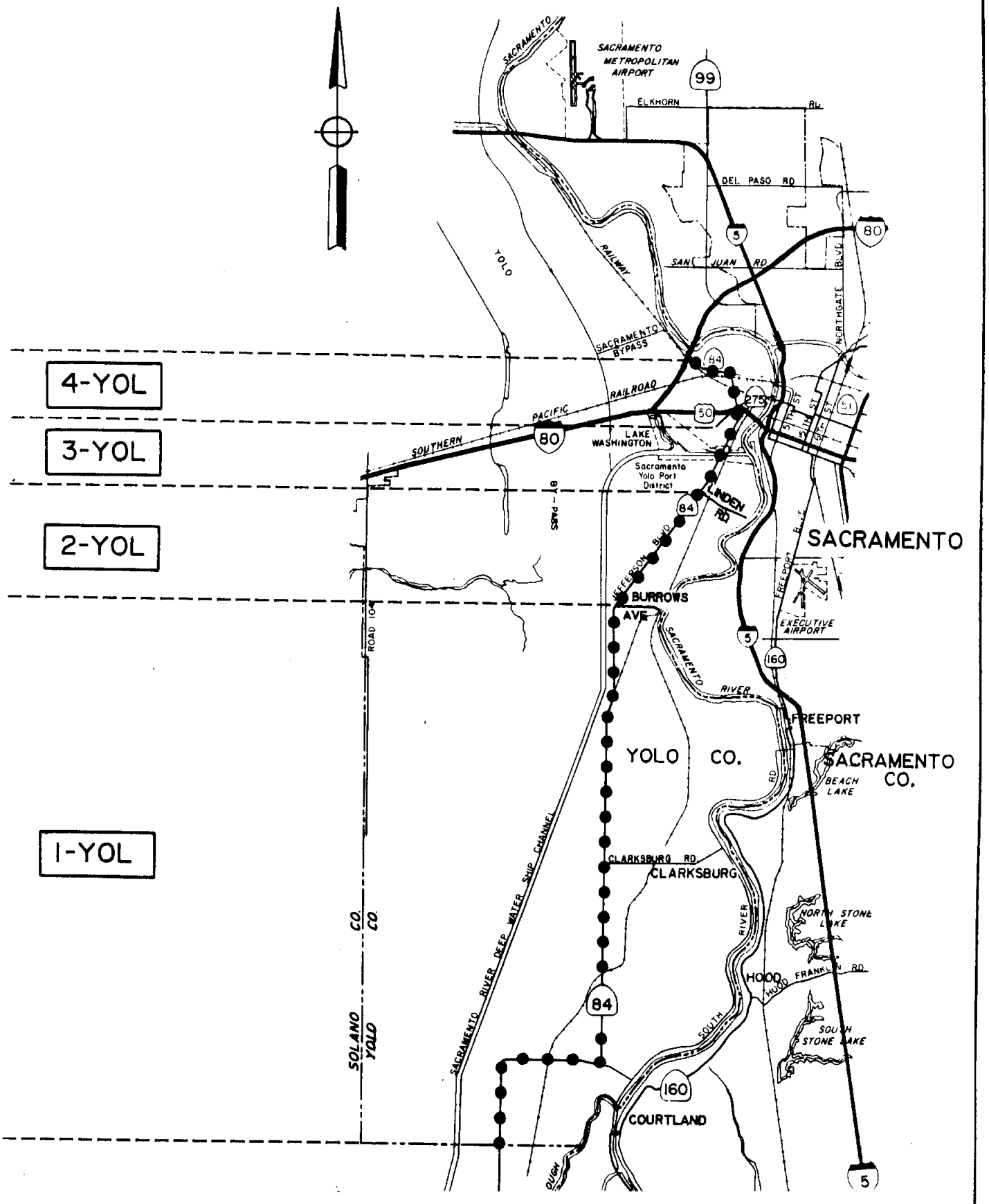

STATE ROUTE 84

ROUTE SEGMENT MAP

ROUTE 84 CONCEPT REPORT SUMMARY

ROUTE CONCEPT

Segment	County	Post Mile	Existing Level of Service	20 Yr. Concept Level of Service	Existing Facility Description	20 Yr. Concept Facility Description
1	Yolo	0.0/15.9	B	Maintain Only	2 C	2 C
2	Yolo	15.9/19.6	D	E	2 C	4 C
3	Yolo	19.6/21.8	E	E	2 C	4 C
4	Yolo	21.8/24.0	C	E	4 C	6 C

CONCEPT RATIONALE

South of Burrows Avenue (P.M. 15.9) in Segment 1, Route 84 will continue to be a minor arterial serving local traffic in a rural area, with a concept of "maintain only". This concept is considered appropriate for Segment 1 due to its low traffic volume and constrained Sacramento River levee location. A "maintain only" designation is consistent with the route concept for similar facilities statewide.

North of Burrows Avenue, significant residential and industrial development in the growing Southport area of West Sacramento will require improving the two-lane principal urban arterial to a four-lane facility in Segments 2 and 3 and possibly a six-lane conventional facility in Segment 4 to serve projected traffic demand.

Level of Service (LOS) E is considered a realistic concept for the West Sacramento portion of Route 84 that generally functions as a local signalized arterial with reduced operational speeds. Improved circulation in the West Sacramento area is also needed to serve expanding development with better emergency evacuation routes.

IMPROVEMENTS NECESSARY TO ACHIEVE THE ROUTE CONCEPT

By 1995, widening the route to at least four lanes north of Burrows Avenue, including widening or replacing the Yolo Barge Canal Lift Bridge, needs to be considered. Traffic operational improvements, Transportation System Management (TSM) strategies to reduce traffic demand, and expanded public transit service will all be essential.

Even with an additional crossing of the Barge Canal, it will be difficult to keep traffic operating above LOS E, assuming the Southport area develops as proposed in the City of West Sacramento's draft General Plan. The City and Sacramento Regional Transit are studying the feasibility of extending light rail to West Sacramento, with a stub line along Jefferson Boulevard to Southport.

ULTIMATE TRANSPORTATION CORRIDOR

From a regional and system planning perspective, there is a long-term need for an alternative north-south highway bypassing downtown Sacramento serving the burgeoning Port of Sacramento. Such a transportation corridor could roughly parallel Route 84 and link Interstate 5 south of Freeport with Interstate 5 near Elkhorn west of Sacramento Metropolitan Airport. A west bypass would greatly benefit traffic operations on Routes 5, 50, 99, and 84 through Sacramento and West Sacramento. The engineering feasibility of such a facility remains uncertain, however. With local support and participation, a feasibility study of a west bypass transportation corridor should be undertaken.

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INTRODUCTION

This Route Concept Report (RCR) presents Caltrans District 3's system planning concepts for development of State Route 84. Considering reasonable financial constraints and forecasted travel demand over a 20-year planning period, this report defines an appropriate type of facility and level of service for this route. The objective of this preliminary planning phase is to identify route capacity improvements needed to attain the concept levels of service, and to help build a basis for subsequent project programming and development. The specific nature of the proposed improvements (i.e., roadway width, number of lanes, access control, etc.) may change in later project development stages, with final determinations made during the project report and design phases. This report also serves to communicate the District's future route development strategy to local and regional agencies.

The assumptions used in developing this Route Concept Report are found in Appendix A, and a summary of route segment data is found in Appendix B.

ROUTE DESCRIPTION AND PURPOSE

Within District 3, State Route 84 is mainly a two-lane unsigned farm-to-market highway that extends 24.0 miles northward from the Solano/Yolo County line to West Sacramento. Route 84 is a minor arterial of local significance that provides access to rural agricultural areas near the Sacramento River in southern Yolo County. In the rural areas of the County the route serves recreational Sacramento River delta traffic as well as agricultural traffic. North of Burrows Avenue (PM 15.9) in the vicinity of the West Sacramento city limits to its termination at Interstate 80, the route functions as a principal urban arterial serving residential and industrialized areas near the Port of Sacramento.

State Route 84 is in the Maintenance Service Level Class 3 category. Maintenance Service Level Class 3 indicates a route or route segment with the lowest maintenance priority. Route 84 is also a part of the Federal-Aid Secondary System, but is not on the National Truck Network or the Interregional Road System (IRRS).

The Yolo County portion of the route within District 3 is legislatively described as being "from Route 12 at Rio Vista to Route 80 near Bryte via Ryer Island".

ROUTE CONCEPT

For analysis purposes, Route 84 in District 3 has been divided into four route segments:

Segment/ County	Post Mile	Limits	Existing/ Concept LOS	Existing/ Concept Facility
1-Yol	0.0/15.9	Solano/Yolo County line north to vic. Burrows Ave.	B/M.O.	2C/2C
2-Yol	15.9/19.6	Burrows Ave. to Linden Rd.	D/E	2C/4C
3-Yol	19.6/21.8	Linden Rd. to Jct. Rt. 50	E/E	2C/4C
4-Yol	21.8/24.0	Jct. Rt. 50 to Jct. Rt. 80	C/E	4C/6C

District 3 considers the 20-year concept for State Route 84 to be "maintain only" (M.O.) in Segment 1 south of Burrows Avenue (P.M. 15.9). North of Burrows Avenue the concept is to attain LOS E by improving the route to a four-lane conventional highway in Segments 2 and 3 and by improving the route to a six-lane conventional highway in Segment 4 where feasible.

In District 10, south of District 3, Route 84 maintains its rural character as a major collector two-lane conventional highway serving agricultural and recreational traffic. District 10 considers Route 84 to be a "maintain only" highway that will remain a two-lane facility in concept throughout the 20-year period.

ROUTE CONCEPT RATIONALE

A concept of "maintain only" is preferred by District 3 for the rural Segment 1 portion of the route and is consistent with the route concept of similar facilities statewide. A "maintain only" designation is considered appropriate due to the low volumes of traffic carried on the segment and its constrained Sacramento River levee location. LOS E is considered a realistic concept for the other three northerly segments that pass through West Sacramento area development and generally function as a local signalized arterial with reduced operational speeds.

South of Burrows Avenue (PM 15.9) in Segment 1, Route 84 will continue to be a two-lane minor arterial serving local needs in a rural area. North of Burrows Avenue in Segments 2 through 4, significant residential and industrial development near the Port of Sacramento and the City of West Sacramento will require widening the route to at least a four-six lane conventional facility to serve projected traffic demand. Travel demand along this corridor will also require good, efficient transit service. Currently, Segment 2 is an unsignalized two-lane roadway; Segment 3 is a signalized two-lane roadway and Segment 4 is four-lane.

In Segments 3 and 4 the existing signalized highway is constrained by roadside development but will require further widening before the year 2000 to satisfy projected traffic demand. Various transit mitigation and transportation system management (TSM) measures such as bus turnouts, trip reduction ordinances and off-street parking will be necessary to help maintain the concept LOS during the 20-year period.

Commercial trucking is anticipated to increase significantly during the next five years in the West Sacramento area. The dredging of the deep water channel will allow larger ships to serve the greater Sacramento area with increased cargo for distribution. Trucks will haul cargo to and from the port at an increasing rate and further development of truck terminal facilities in West Sacramento will contribute to this rise in truck traffic.

The City of West Sacramento has been studying several potential bridge crossings to improve future traffic circulation so that travel demand generated by proposed land uses in the area of the city south of the barge canal and Deep Water Channel might be served. The City's Draft General Plan discusses the future need for six-lane bridges on Route 84 (Jefferson Boulevard) across the barge canal, at Linden Road across the Sacramento River, at Industrial Boulevard across the barge canal and at Enterprise Boulevard over the Deep Water Ship Channel. A crossing at River Road is also mentioned. Various arterial widenings are proposed to deal with the large amount of traffic generated by development planned in the West Sacramento area.

Improved traffic circulation in the West Sacramento area is also needed for emergency evacuation purposes.

ROUTE ANALYSIS

Segment 1 (Yol-84 PM 0.0/15.9)

Segment 1 has a straight and level alignment as it passes through southern Yolo County except for two 90-degree curves near the District 3/District 10 boundary. Agriculture is the dominant land use activity near this portion of Route 84. The Sacramento River parallels the State highway and a portion of the route runs on top of the Sacramento River Deep Water Channel levee. This segment is currently operating at LOS B and will require only normal interval maintenance and rehabilitation over the 20-year period.

The Segment 1 route concept calls for a "maintain only" policy regarding the existing two-lane conventional facility. Major widening is not recommended since the projected traffic demand in 20 years will only have a volume to capacity (v/c) ratio of .31 in this rural area. Various structural section repairs may be necessary over the next 20 years due to unstable expansive soil along this route segment.

Segment 2 (Yol-84 PM 15.9/19.6) and Segment 3 (Yol-84 PM 19.6/21.8)

West Sacramento is developing rapidly near Route 84. Land use along Segments 2 and 3 has traditionally been agricultural but is now transitioning to residential, commercial and industrial development in the area south of the Port of Sacramento. The area north of the port has been filling primarily with industrial development. More local traffic is anticipated from nearly 1,600 acres of new commercial, industrial and residential development in and around West Sacramento.

Traffic volumes between Burrows Avenue and Park Boulevard (near the east entrance to the Port) are anticipated to increase significantly. Along this two-lane conventional highway in Segments 2 and 3, traffic is currently operating at LOS D and E; by 1995 the LOS in segment 3 is projected to deteriorate to F.

Near the north end of Segment 3 (PM 20.5), Route 84 crosses the Yolo Barge Canal on a low drawbridge. The Yolo Barge Canal lift bridge is rarely opened anymore except in emergency situations or for inspection purposes due to current U.S. Army Corps. of Engineers, Sacramento District operation directives and the lack of barge traffic.

The route concept calls for widening the State highway and the Yolo Barge Canal Bridge to at least four-lane conventional standards to maintain LOS E since four-lane capacity will be required by the year 1995. The West Sacramento draft General Plan calls for the widening of Jefferson Boulevard to four lanes between Davis and Linden Roads, to six lanes between Linden Road and 15th Street (including the barge canal bridge) and four lanes between 15th Street and Park Boulevard.

A small portion of Segment 3, just north of the Yolo Barge Canal (PM 20.9 to 21.4), has only two lanes but the existing pavement may be sufficient to provide four lanes if residential parking on the west side is prohibited. The draft City of West Sacramento General Plan proposes a "Special Study Corridor" designation for Jefferson Boulevard between the barge canal and south of 15th Street. No new land uses would be allowed along this corridor until the special study is completed.

Local agencies have proposed widening the Route 84 lift bridge and building a high level bridge farther west to handle projected growth in vehicular traffic. The City's draft General Plan calls for the second barge canal bridge (with six-lane capacity) to be constructed across the waterway at the foot of Industrial Boulevard about 1-1/2 miles west of the current Yolo Barge Canal bridge. The new bridge would serve to link the commercial and industrial facilities on the north side of the Port and ship channel with the Southport area.

Even with the construction of a second barge canal bridge it is expected that Jefferson Boulevard will continue to handle the majority of residential and commercial traffic. (Jefferson Boulevard is existing Route 84 in the developed areas near the port in West Sacramento; currently it operates as a

signalized city arterial.) Intensified truck traffic from the expanded port facilities is anticipated to continue using alternative local roads (i.e. Harbor Boulevard, Stone Boulevard, Industrial Boulevard and South River Road) to avoid future congestion on Route 84 (Jefferson Boulevard).

Segment 4 (Yol-84 PM 21.8/24.0)

Traffic along Segment 4 between Junction Route 50 and Junction Route 80 is currently operating at LOS C, and is projected to drop to E by the year 2010. The City of West Sacramento is looking at extensions to parallel local streets to provide relief to Jefferson Boulevard in the vicinity of the Highway 50 and 275 interchanges. The route concept for this segment along Jefferson Boulevard, Sacramento Avenue and Reed Avenue is to develop a four- to six-lane conventional highway operating at LOS E. A six-lane facility is needed if adequate right of way exists to serve projected traffic demand. The West Sacramento draft General Plan calls for the widening of Reed Avenue to six lanes between Harbor Boulevard and West Capitol Avenue. No High Occupancy Vehicle (HOV) facilities are proposed along the more developed portions of the Route 84 corridor at this time.

IMPROVEMENTS NECESSARY TO ACHIEVE THE ROUTE CONCEPT

By 1995, widening Route 84 to at least four lanes north of Burrows Avenue (Segments 2,3 and 4), including widening or replacing the Yolo Barge Canal Lift Bridge, needs to be considered. Peak period traffic is projected to operate at LOS F along Segments 2 and 3 after 1995 without improvement.

Transportation System Management (TSM) strategies are recommended near developing areas of West Sacramento to reduce traffic demand. Local and private sector funding will be instrumental in programming major Route 84 widening improvements where additional highway capacity is needed to serve future development near the Port and developing areas to the south.

As traffic volumes increase, the Sacramento Metropolitan Air Quality Management District (SMAQMD) will increasingly link transportation and land use issues to achieving the region's air quality goals. Some of the mitigation measures being considered for adoption by SMAQMD include employer trip reduction, truck traffic control, volume and length reduction of non-work trips, and Transportation Systems Management (TSM) programs to encourage transit usage and ridesharing.

The District's Long Range Operations Plan (LROP) recommends systematic implementation of a Traffic Operations System (TOS) to minimize delays and queues caused by incidents and recurring congestion on the metropolitan area highway network.

PUBLIC TRANSIT

It is anticipated that local transit service provided by Yolo Bus will grow with development in the City of West Sacramento during the 20-year period. Service along Jefferson Boulevard (Route 84), the port and residential areas will intensify with need. Developments such as Raley's Landing, Lighthouse

Marina, the Port of Sacramento and industrial development near Harbor Boulevard will provide increased jobs and housing to fuel growth and generate trips in the West Sacramento area.

Currently the Yolo County Board of Supervisors presides as the transit authority on behalf of West Sacramento, Yolo County, Davis and Woodland. Soon a new Joint Powers Authority called the Yolo County Transit Authority is to be formed representing these same geographical areas. In the future, area wide transit systems such as Yolo Bus in West Sacramento and Unitrans in Davis will increasingly seek to coordinate and improve their transit services. An on-board transit survey was carried out in 1988 to find ways to improve the efficiencies of each system. Yolo Bus is also interested in future West Sacramento transfer capabilities involving Interstate 80 corridor commuter rail alternatives between San Francisco-Oakland and Sacramento. The City of West Sacramento is willing to consider the establishment of a multi-modal transportation center in the Central Business District.

Other transportation facilities paralleling the Route 84 corridor include (1) the Sacramento Northern Railway, used exclusively for rail freight, (2) the Sacramento River, used primarily by pleasure craft, and (3) the Sacramento River Deep Water Ship Channel.

No light rail facilities are planned along the Route 84 corridor at this time. However, the City Council of West Sacramento has authorized its financial participation in a systems planning study of light rail with Sacramento Regional Transit, which would study transit trip demand in and out of West Sacramento.

Specifically, a light rail extension study will be produced examining two alignments within the Davis/West Sacramento corridor. One of the light rail alignments to be examined for the City of West Sacramento will be an extension to the Southport community utilizing portions of the Sacramento Northern Railway right-of-way. It is anticipated that a final report for the Davis/West Sacramento Light Rail Extension Study will be completed by February 1991.

According to the City of West Sacramento's draft General Plan, should an extension of light rail into the City prove infeasible, the City shall seek development of a feeder-bus system to facilitate use by West Sacramento residents of a South Sacramento extension of the light rail system.

OTHER ITEMS

As further development occurs throughout the West Sacramento area, Route 84 will not only become more important for traffic circulation reasons but also as an emergency route. Route 84 is currently the only escape route for people living or working in areas west of the Sacramento River and south of the Barge Canal during an emergency. An above grade evacuation route should be considered as a part of future roadway improvements in the West Sacramento and Southport areas undergoing development.

The City also plans to work with railroad companies, rail-dependent industries, and property owners in developing an overall strategy for rail lines in West Sacramento, including plans for the development of alternative rail access, a schedule for abandonment of certain rail lines, and plans for the ultimate use of abandoned railroad rights-of-way.

Recent legislation addressing funding issues in the form of SCR 96 (Garamendi, 1989) calls for Caltrans, the California Transportation Commission, and west coast ports to explore and identify all possible sources of funding for improving port road access, including state and federal transportation funds. Highway, railroad and other port operational improvements that would relieve congestion on state highways such as Route 84 and Business 80, and West Sacramento Bypass corridor studies that might provide further transportation capacity, could receive diverse funding sources through this legislation. Improving trade capability with other Pacific Rim nations makes better port access and goods movement using improved nearby State highways and transportation facilities a vital economic issue.

ULTIMATE TRANSPORTATION CORRIDOR

From a regional and system planning perspective, there is a long-term need for an alternative north-south highway bypassing downtown Sacramento serving the burgeoning Port of Sacramento area. LOS E and F conditions by 1995 on Route 84 Segments 3 and 4 would indicate a need to look at other transportation alternatives (with emphasis on the north end of the route) involving a new corridor that might improve port access to the west and separate through traffic from local traffic using Jefferson Boulevard. Certain portions of the existing route through West Sacramento could be considered for relinquishment through negotiation with local agencies.

Such a transportation corridor could roughly parallel Route 84 and link Interstate 5 south of Freeport with Interstate 5 near Elkhorn west of Sacramento Metropolitan Airport. A west bypass highway would greatly benefit traffic operations on Interstate 5, Routes 50, 99, and 84 through Sacramento and West Sacramento.

The role of a future West Sacramento bypass highway takes on more importance as the Interstate 5 corridor near the expanding Metropolitan Airport, enlarging Arco Arena sports complex and high-rise Sacramento development becomes further impacted by increased volumes of locally generated traffic. Much of the I-5 traffic going through Sacramento using the constrained "Boat section" of this parallel corridor (with Route 84) will incur increased delay from this heightened demand without a high capacity reliever facility. Worst case level of service on Interstate 5 through Sacramento is at F now and could be operating at congested speeds below 20 MPH for extended peak periods by the year 2010 if nothing is done.

Additional high standard highway access will also become necessary near Route 84 when the Port of Sacramento expands its cargo distribution from higher capacity shipping as a result of the Deep Water Channel deepening. A large

percentage of the growing volume of future port truck traffic is expected to use I-80 and Route 50 creating a need to study nearby interchange improvements, but a portion of this traffic desiring access to I-5 would benefit greatly with a direct connection provided by a bypass west of the port. The engineering feasibility of such a facility remains uncertain, however. With local concurrence and participation, a feasibility study of a west bypass transportation corridor should be undertaken.

COMMENTS FROM OTHER AGENCIES

The draft Route Concept Report was circulated to cities, counties and regional transportation planning agencies along the Route 84 corridor. The comments received are reflected in the final report.

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APPENDIX A

Assumptions

The following assumptions form the basis for the development of Route Concept Reports:

1. The relative importance of State highways in the District can generally be established based on the functional classification of the routes. In general, higher priorities will be given to major improvements on principal arterial routes as compared to minor arterials and collectors.

2. For routes the District can reasonably expect to improve (generally Principal Arterials), realistic concept Level of Service (LOS) must be established for each route in order to have route concepts and route development plans which are possible to achieve, given a forecast of future revenues. A concept LOS is not established on routes which will only be rehabilitated and/or maintained.

3. Level of service and capacity calculations are based on the 1985 Highway Capacity Manual. Previous Route Concept Report level of service and capacity calculations were based on the 1965 Highway Capacity Manual.

4. Determinations of future LOS for the routes in District 3 are based in part upon Statewide and District forecasts of State highway travel developed by Caltrans.

5. Route concepts are generally uniform for an entire route, unless there is a major change in function along the route.

6. Major projects will be developed to meet standards acceptable to the Federal Highway Administration in order to receive Federal funding for projects. Otherwise, a "design exception" will be prepared during the project development process.

7. For all routes, safety projects will be pursued on an on-going basis in order to be responsive to safety problems as they are identified.

8. Air quality is a critical concern in the Sacramento Metropolitan Area, which is a non-attainment area for federal Environmental Protection Agency (EPA) carbon monoxide and ozone level standards. Future highway and other alternate mode projects would address air quality issues as required through normal environmental processes.

APPENDIX B

SEGMENT DATA TABLE

ROUTE 84

	SOL/YOL CO. LINE	WEST SACTO. CITY LIMITS	LINDEN ROAD	JCT ROUTE 50	JCT ROUTE 80
Post Mile		0.0/15.9	15.9/19.6	19.6/21.8	21.8/24.0
Segment/County		1-YOL	2-YOL	3-YOL	4-YOL
Present Fac (post STIP)		2C	2C	2C	4C
Concept Facility 2010		2C	4C	4C	6C
LOS 1988 (average)		B	D	E	C
LOS 2000 (average)		B	F	F	D
LOS 2010 (average)		C	F	F	E
Concept LOS (20-year)		maintain only	E	E	E
AADT 1988		1,500	5,200	16,000	19,000
AADT 2000		3,300	22,000	37,700	27,600
AADT 2010		4,800	36,100	55,600	34,700
% Traffic Growth/Year		10.0%	27.0%	11.3%	3.8%
Post STIP Capacity		1,600	1,600	1,600	2,800
Peak Period V/C 1988		0.10	0.35	0.65	0.53
Peak Period V/C 2000		0.21	1.13	1.50	0.75
Peak Period V/C 2010		0.31	1.49	2.15	0.93
LOS Below Concept (yr)		not applicable	post 2010	1995-2000	1995-2000
PHV 1988		180	560	1,600	1,900
PHV 2000		400	2,500	3,800	2,800
PHV 2010		600	3,600	5,600	3,500
Pk Hr Dir Split 1988		64%	62%	53%	64%
Pk Hr % Trucks 1988		5%	4%	3%	3%
Daily Truck % 1988		10%	10%	4%	3%
Tot Acc Rate vs St Avg		0.77	1.06	0.91	1.27
F + I Acc Rate vs St Avg		0.55	1.25	0.96	1.55
Land Use		Agricultural	Residential	Commercial	Commercial
Terrain		Flat	Flat	Flat	Flat